



WATER RESOURCES RESEARCH GRANT PROPOSAL

Project ID: 2005NJ88B

Title: A Study to Link Atmospheric N Deposition with Surface and Ground Water N and Denitrification Capabilities in an Urban New Jersey Wetland

Project Type: Research

Focus Categories: Nitrate Contamination, Wetlands, Water Quality

Keywords: None

Start Date: 03/01/2005

End Date: 02/28/2006

Federal Funds: \$29,556

Non-Federal Matching Funds: \$61,654

Congressional District:

Principal Investigators:

Barbara Turpin

B. W. Ravit

Abstract

The overall goal of the Teaneck Creek restoration project is to maximize system denitrification capabilities following wetland enhancement and restoration.

This proposal seeks to determine both inorganic and organic atmospheric N deposition (wet and dry) in the TCC site. Expected results of the atmospheric N deposition research include increased knowledge related to the amounts, and potentially the sources, of atmospheric N deposition into a highly urbanized N.J. wetland system. The specific objectives of this proposal are to characterize the amounts and the chemical composition of total N-species, inorganic and organic, present in the atmospheric wet and dry N deposition within the Teaneck Creek site.

The atmospheric research portion of the project meets NJ priorities for : I) quantification of the atmospheric N deposition within a N.J. urban wetland, and the opportunity to determine the importance of atmospheric N deposition, which at present is poorly known in highly urbanized ecosystems; II) analysis, assessment and management of water

quality, including linkage of atmospheric N deposition with surface water N concentrations; III) predictive value in future urban wetland restorations using the Urban Hydrologic Model, and in combination with data from other monitoring projects in the Pinelands and Camden, N.J. (see below), the potential to estimate the impact of atmospheric N deposition into waterways within the state of New Jersey; IV) data to support the development of protocols to detect atmospheric DON deposition in a Year 2 study; V) data related to the impact of land-use practices through analysis pre- and post-wetland creation; VI) information transfer to the public through the outreach activities of the non-profit TCC organization.